

Prevalence of Smoking in Teenagers Male Undergraduate Students a Study of Karachi, Pakistan

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Abstract – Tobacco use primarily begins in early adolescence, reportedly before the time of high school graduation. This study aims to report the prevalence of smoking in teen age male students. Questionnaire was designed and its reliability was calculated using Cronbach's alpha ($\alpha=0.805$) and administered to one thousand teenage male students. Eight hundred and seventy five participants returned completely filled questionnaires. They were categorized into seven groups according to their ages (13 to 19 years). The main outcome measures were prevalence, trends (number of cigarettes per day) and reasons for smoking in these students. Pearson coefficient was calculated to explore correlation of prevalence of smoking with age. 535 (61.14%) respondents reported cigarette use. Older individuals consumed more cigarettes per day than younger ones. There was a significant positive correlation of prevalence of smoking with age calculated by Spearman correlation ($r=0.821$, $p<0.05$). Different reasons of smoking were reported by different age groups. It was also found that the majority of teachers know about smoking habits of their students as compared to the parents. Smoking habit increases with age, formerly started for fun then it becomes the regular practice in these students which can turn into drug abuse over time by older ages. Attention from teachers and parents, good family atmosphere and educational programs at school and college levels should be arranged to reduce this prevailing habit of smoking in teen age males students.

Keywords – Smoking habits, teen age, tobacco, teachers, adolescence

1. Introduction

According to tobacco is a major contributor to deaths from chronic diseases [1]. There are about 1.3 billion smokers in the world and approximately 80% of them live in the developing countries. There are 5 million deaths per year from tobacco use which are expected to rise to 10 million by the year 2025 [2]. It is predicted that during the first quarter century, the number of smokers will increase by a half billion, and the number of annual tobacco-related deaths will more than triple to 10 million, with developing countries suffering the greatest impact [3]. In developed countries also, cigarette smoking is the largest preventable risk factor for morbidity and mortality where at least one in four adults smokes cigarettes [4].

The National survey of US college students on tobacco use indicated that more than half (61%) of the students had used a tobacco product in the past while one-third were presently using tobacco with cigarettes accounting for majority of tobacco use [5]. The prevalence of smoking continues to increase especially among the younger age groups in developing countries [6]. Factors that commonly play a role in initiation of smoking among adolescents include social factors, smoking among family members, peers, teachers, psychological relaxation, and pleasure [7]. Many high-income countries are showing a continuous and steady decline in the prevalence of smoking. In contrast, tobacco use in developing countries such as Pakistan continues to rise each year [8]. Rozi et al, reported 24%

prevalence of current smoking (30 days prevalence) among college students studying in private and public colleges in three towns of Karachi. Another study conducted in Karachi on school going adolescents reported a prevalence of current smoking to be 13.7% [9]. Other studies have reported parental or relatives smoking as an influence on initiation of smoking [10].

The harmful consequences of smoking on health have been well documented. Tobacco smoking is a major risk factor for non-communicable diseases such as ischemic heart disease, stroke, chronic obstructive airways disease and several cancers [11]. Smoking leads to decreased HDL and increased VLDL by increased secretion of catecholamine and other hormones and it has been a well-known cause of coronary artery disease [12]. Smoking is associated with a considerable economic burden. The global health care costs resulting from tobacco use exceed \$200 billion a year, more than twice the combined current health budgets of all developing countries [13].

Most smokers take up the habit of smoking as adolescents [24]. Becoming a smoker is not an abrupt one-time decision, but occurs over time. If teens continue through the experimentation phase and go on to become smokers, addiction of nicotine become extremely difficult to quit. Therefore, the most promising public health strategies for reducing smoking in the population involve estimating the smoking prevalence, interrupting the process of smoking uptake and preventing experimentation with smoking among

teens.

This study aims to find out the prevalence and trends (consumption of cigarettes per day) and reasons for smoking in the teenaged male students studying in different schools and colleges of Karachi which is a metropolitan city of Pakistan.

2. Materials and Methods

2.1. Sample

A cross sectional survey based on random sample of 1000 teen age male students was conducted in metropolitan city of

Karachi, Pakistan from August to December 2012. The rationale to conduct the study on male students was based on GYTS findings. According to this study there is a very low prevalence of smoking among female students in Pakistan [2]. These participants were categorized into seven groups according to their age (13 years to 19 years) to determine different study variables.

Table 1. Some important characteristics of Respondents

	Frequency	Percentage
Education		
Lower secondary	193	36.07%
Higher secondary	169	31.58%
College	173	32.33%
Parental status		
Single parent	236	44.12%
Both parents	299	55.88%
Number of siblings		
<i>Both parents</i>		
2-3	147	27.47%
4-6	152	28.41%
<i>Single parents</i>		
2-3	116	21.68%
4-6	120	22.42%
Mother is working		
Yes	379	70.84%
No	154	28.78%
Parents' smoking		
Yes	328	61.30%
No	207	38.69%
Teachers' attention on individual students		
Yes	138	23.79%
No	397	74.20%
Teacher's information about students' smoking habit		
Yes	415	77.57%
No	120	22.42%
Parent's information about their children's smoking habit		
Yes	126	23.55%
No	409	76.44%
Study burden is high		
Yes	367	68.59%
No	168	31.40%
Satisfied with number of extracurricular activities at school/college/university		
Yes	91	17.00%
Less satisfied	184	34.39%
No	260	48.59%
Spend time with family		
Daily few hours	325	60.74%
Few hours on weekend	101	18.87%
No	109	20.37%
Teachers counsel students for their personal and educational problems		
Yes	136	25.42%
No	399	74.57%

2.2. Ethical Approval and Verbal Consent

Ethical approval was taken from the Ethical Review Committee (ERC) of Dr. Ziauddin University Hospital, Karachi-Pakistan. The Response to this survey was voluntary and purpose of study was explained to the participants and they were assured that the responses will not be disclosed to any school/college/university authority and privacy would be respected. Verbal informed consent was taken from study participants. Survey was completed during class time in the absence of an invigilator.

2.3. Drawing of Questionnaires and Variables

Smoking was defined as consuming one cigarette per day habitually. A questionnaire was developed to measure different variables such as prevalence, trends (number of cigarettes per day) and reasons of smoking, the parental habit of smoking, lack of association with parents, teachers and family which cause depression and loneliness and provoke smoking. The reliability analysis of questionnaire was done by calculating Cronbach's alpha ($\alpha=0.805$). All the responses were measured on nominal and ordinal scale.

3. Results

In Pakistan, a student passes his/her matriculation or secondary school examination (grade ten examinations) in the age of 17 years and Intermediate or higher secondary school examination in 19 years of age. According to this, majority of the study participants were school going (13-17 years). Important characteristics of study participants are established in Table 1. A strong positive correlation was found between age and prevalence of smoking by Spearman correlation ($r=0.821$) as shown in Table 2. Respondents from smokers group also reported that their smoking is influenced by parental smoking habits. It is also indicated that younger boys consume less number of

cigarettes than the older ones. The trend of consuming cigarette per day with respect to the age is given in Table 3. The major reasons of smoking among teenagers male are summarized in Table 4.

Table 2. Prevalence of smoking in different age groups

Age (years)	Total	Smokers	%age	Non Smokers	%age
13	78	25	32.05	53	67.95
14	116	52	44.83	64	55.17
15	140	89	63.57	51	36.43
16	128	81	63.28	47	36.72
17	141	96	68.09	45	31.91
18	123	84	68.29	39	31.71
19	149	108	72.48	41	27.58

4. Discussion

The world is in the midst of smoking epidemic as multinational tobacco companies turn to the developing world to replace diminishing markets in industrialized nations [15]. One-third of the world's adult population is smokers (47% of these being men, 7% women) and each year, tobacco causes about 10,000 deaths each day [16].

Smoking is a risk factor for several diseases and has been increasing in many developing countries. In 2000, 4.83 million premature deaths in the world were resulted from smoking among which 2.41 million were in developing countries and 2.42 million in industrialized countries and 3.84 million of these deaths were in men [17]. Recent projections from the World Health Organization (WHO) suggest that, by the year 2020, tobacco will become the largest single cause of death, accounting for 12.3% of global deaths [1].

Table 3. Trends of smoking in different age groups

Age (years)	Respondents Smokers (N)	Number of Cigarettes per day			
		1 Cigarette/day	2 Cigarettes/day	3 Cigarettes/day	4 Cigarettes/day
13	25	18	07	-	-
14	52	19	24	7	2
15	89	17	42	19	11
16	81	20	23	26	12
17	96	18	35	28	15
18	84	15	24	28	17
19	108	15	32	36	25

Low and middle-income countries, account for 82% of the world's smokers [18]. South Asian and Middle Eastern countries contribute more than 12% of all deaths caused by tobacco use. According to Washington Post, smoking in developing countries is rising by more than 3% a year [19]. Young people are the main source of tobacco consumption for the tobacco industry. That is why this study was designed to report the prevalence of smoking in teen age males. For this purpose a brief questionnaire was administered to young male students during their class

time in the absence of an invigilator. The proctored interview could have resulted in respondents not reporting actual smoking behavior [20]. In this study, out of 875 male students, 535(61.14%) were smokers (Figure 1). Prevalence of smoking was found to be proportionate with age. The number of smokers was least in 13 years and increased by 19 years of age showing that with increase in age the prevalence of smoking is also increased ($r=0.982$). The majority of the respondents began smoking well at the age of 13 years. Shah and colleagues also reported in their study conducted in Northern area of Pakistan that 90% of

smokers started smoking before 20 years of age and smoking cigarettes increased with increasing age as 1.26 times per 10 years [21]. Another study conducted in low socioeconomic areas of Karachi reported a prevalence of 26% among people aged 15 years and above [22]. If current pattern of smoking behavior continues, an estimated 6.4 million of today’s children can be expected to die prematurely from smoking-related illnesses.

Table 4. Reasons for Smoking

Reasons for Smoking	Age (years)						
	13	14	15	16	17	18	19
Fun/Adventure	19	18	17	14	11	9	7
Mood Elevation	0	11	27	16	20	14	13
Ignorance from family and teachers	3	9	13	11	15	17	21
Academic pressures/burden	-	1	6	4	9	7	9
Socio-economical crises/ Failures in life	-	3	12	9	8	8	13
Habitual to smoke		3	5	15	21	14	28
Parents relationship	3	7	9	12	12	15	17

Domestic atmosphere, relationship between parents, attention from teachers and parents were the main reasons of smoking in individuals of 15-19 years. The parental state also influences the smoking habit. Although most of the individuals were living with both parents but had four or more siblings and majority of the smokers (70.84%) reported that their mothers are working ladies. Working mothers cannot spend much time with their growing children to advise them against the use tobacco and that is why 76.44% respondents’ parent did not know that their son smoke tobacco. On the other hand students informed that adults (father and/or other adults) at their home also smoke frequently. Adult smoking at home is a major stimulation for teens to smoke [16 and 23]. But banning smoking in the home, even when parents and/or adults smoke, gives an unequivocal message to teenagers about the unacceptability of smoking [24].

Different reasons for smoking were reported by different age groups. In younger ages most of them smoke for only fun and adventure in company of friends who smoke. A study reports that those students who had friends who smoked were more likely to be smokers than those who didn’t [15]. Having friends who smokes is one of the biggest risk factor for the progression of smoking in teenager males. Also at this age, adolescents want to be part of a group and try not to be left out which explains their propensity to continue smoking [25]. With age advancement the smoking becomes a result of attention deficit from family and teachers, poor relationship with parents and as a way to elevate their mood. Kids from close families were less likely to smoke. 68.95% students reported that the study burden is high and majority of the students were either dissatisfied or less satisfied with the number of extracurricular activities at their educational institute. Students who spend their leisure time in some activities and keep themselves busy in reading books, playing games, avail computer facilities were less likely to be smokers. Whereas, those teenagers who were involved

in watching tobacco promotion ads on electronic media was significantly associated with smoking [2]. It was also come to our knowledge that majority of smokers were very well aware of consequences associated with smoking (Figure 2), but even though they don’t care and continue smoking without any hesitation.

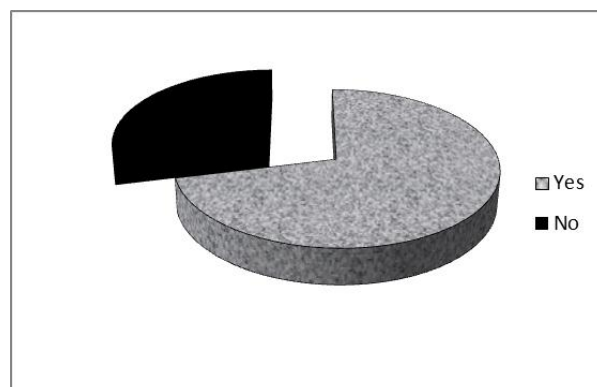


Figure 1. Prevalence of Smoking

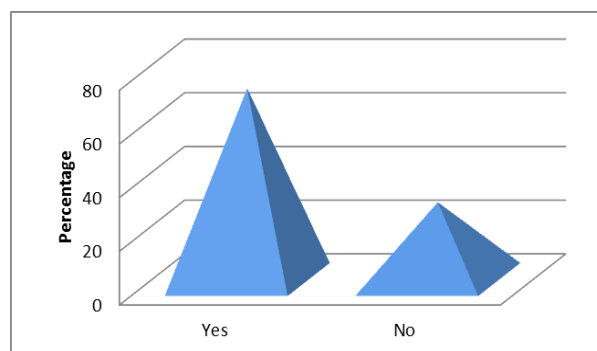


Figure 2. Awareness of Risks associated with smoking

Smoking at an early age increases the risk of lung cancer. For most smoking-related cancers, the risk rises as the individual continues to smoke [26]. Teenage smokers suffer from shortness of breath almost three times as often as teens that don't smoke, and produce phlegm more than twice as often as teens who don't smoke. Teenage smokers are more likely to have seen a doctor or other health professionals for an emotional or psychological complaint and they are three times more likely to use alcohol, eight times more likely to use marijuana, and 22 times more likely to use cocaine than non-smokers [27]. Some reports show risk awareness to be directly, not inversely correlated to smoking rates in youth [28]. A recent poll conducted by Gallup Pakistan shows that an overwhelming majority of all Pakistanis (85%) believe smoking to be detrimental for health, 75% believe it is equally precarious for men and women and majority supports a complete ban smoking in all public areas. But despite widespread public disapproval, no significant decline has been found in the incidence of smoking tobacco in the country [29]. Approximately 90% of the lung cancer cases in men and 79% in women are attributable to cigarette smoking [30]. It has been reported that 47 brands of cigarettes used in Pakistan have 87% tar and 78.7% nicotine concentration above the upper range of International standards (20mg/ cigarettes for tar and 2mg/ cigarettes for nicotine) thus

causing irreparable damages to one's health [31].

The non-awareness of parents regarding the smoking status of their children gave them the opportunity the start and to continue their smoking habit. These students also have more favorable attitudes toward smoking and reported greater acceptance of smoking by their friends. It was also noted that teenagers whom parents were less educated considered themselves free from adult supervision and were less likely to quit smoking. In fact, this factor boosted their confidence to smoke on regular basis.

Youth is the golden asset for any nation, therefore reducing the prevalence of smoking among teenagers is an important goal for health and education professionals. However, it is important to understand the psychology of male teenagers. Most of the youngsters at this stage of life are only partially mature. Their ability to differentiate between good and bad is not really developed at this stage. It is important to realize this factor while counseling them carefully regarding the smoking habit because more strictness could also push the teenager towards this bad habit rather than pulling him away from it.

Teachers play a key role in building up of their students' character as a human being. The young age students are more impressed by their teachers in every way than their parents. That is why teachers are in a position to advise their students for their personal and educational problems and if they know about any student smoke, they must counsel him.

Healthcare staff plays an important role in educating public about health hazards of tobacco and in advising people to quit smoking [32]. Anti-tobacco policies have been shown to increase the number of smokers attempting to quit. Smoking free areas in educational institutes specially schools and colleges, public health campaigns and the role of healthcare professionals are the priority policy development areas identified to support this issue. Educational programs by healthcare professionals should be organized in schools and colleges to narrate these teens the hazards of smoking. Collaboration is needed to be developed between government and healthcare professional organizations to establish and promote guidelines, policies that encourage healthcare professionals to take a more active role in the treatment of Tobacco and reducing its prevalence especially in teens [33].

5. Conclusion

In view of the expected demographic and epidemiological transitions and current smoking patterns in the developing world, the health loss due to smoking will grow even larger unless effective interventions and policies that reduce smoking among men and prevent increases among women in developing countries are implemented. The federal and state governments have several policy tools they can use to discourage teen smoking. Among these are increased cigarette excise taxes, limits on cigarette advertising and restrictions on the availability of cigarettes and on public smoking.

Implication for schools

Schools can lead the fight against tobacco use and addiction. Teachers should inform parents about their children's smoking and guide them to overcome the reasons of smoking in their children. The teachers should explain the potential long-term consequences of smoking to their students such as cancer, heart attack and stroke. Teens tend to assume that bad things only happen to other people. They should be given real life examples of loved ones, friends, neighbors or celebrities who've been ill or have died of smoking. Involvement of students in recreational activities can also reduce smoking trend in teenage. The teens who smoke should not be disregarded by teachers or the family. They should be taught that avoiding or stopping smoking is one of the best things which can give him lifetime of good health where he can achieve best in life.

Conflict of Interest (S)

The authors declare that there is no conflict of interests regarding the publication of this article.

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